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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/774,245

02/06/2004

Paul Hepworth

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EXAMINER

HESS, DANIEL A

ART UNIT

PAPER NUMBER

2876

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/774,245

Applicant(s)

HEPWORTH ET AL.

Examiner

Daniel A. Hess

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-12, 19-21 and 28-30 is/are rejected.
- 7) ☒ Claim(s) 4-9, 13-18, 22-27 and 31-36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/10/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This action is in response to 2/6/2004 initial filing by the applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2876

Claims 1-3, 10-12, 19-21 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilz, Sr. et al. (US 6,328,211), hereinafter Wilz in view of “Early History of Software Engineering” by Robert Glass (hereinafter Glass).

Re claim 1, 10, 19 and 28: Individual limitations of the claims are listed below in italics, followed by a discussion of how that limitation is taught or rendered obvious.

A data collection device for reading a machine readable data storage medium comprising data encoded in a readable format, the data collection device comprising:

Wilz’s device is (figure 1a) a barcode scanner, and therefore is a data collection device for reading a machine readable data storage medium (i.e. the barcode). The barcode contains data that is encoded in a format readable by machine.

a) a medium reading system for detecting a characteristic of the machine readable data storage medium and generating digital data representative of the characteristic;

The ‘medium reading system’ is the barcode scanner. The term ‘detecting a characteristic of the machine readable data’ really means that some portion of the barcode is read by the reader which all barcode readers do. As for ‘generating digital data representative of the characteristic’ see figure 2, ref. 6, where an analog-to-digital converter converts the raw data from the photodetector 42 into digital data.

b) a processor operating an embedded decoder system comprising a decoder module and an interpreter module;

Wilz teaches (column 10, lines 55-60):

“In the illustrated embodiment, third control means 13, **symbol decoding means 7**, and **data format conversion means 8** and data storage means 9 are realized using a single programmable device, such as a **microprocessor 63** having accessible memory and external timing means. “

Here it is important to note that the data format conversion means 8 is the recited interpreter module.

i) the decoder module receiving the digital data, determining the data encoded in the machine readable data storage medium, and generating decoded data; and

This is achieved by the symbol decoding means 7 of Wilz. Wilz teaches (column 9):

“The digitized scan data signal D.sub.2 is provided as input to symbol decoding means 7, which scan line by scan line, decodes processes in a conventional manner, the stream of digitized scan data. The decoding means 7 processes a scan line of the digital scan data at a time, in an attempt to decode a valid bar code symbol within the second predetermined time period T.sub.2 established and monitored by timing means 55 of second control means 12. “

ii) the interpreter module receiving the decoded data and manipulating the decoded data in accordance with the plurality of data manipulation commands defined in a rules file to generate formatted data.

See figure 2, reference 8, which is actually labeled, **data format conversion means**.

Wilz teaches (see column 10, lines 1-25):

“As shown, symbol decoding means 7 provides symbol character data D.sub.3 to **data format means 8** to convert data D.sub.3 into **two differently formatted types of symbol**

character data, namely D.sub.4 and D.sub.5. Format-converted symbol character data D.sub.4 is of the "packed data" format, particularly adapted for efficient storage in data storage means 9. Format-converted symbol character data D.sub.5 is particularly adapted for data transmission to a host device 60, such as a computer, or electronic cash register. When symbol character data D.sub.4 is to be converted into the **format of the users choice** based on a selected option mode, third control means 13 generates and provides enable signal E.sub.6 to data storage means 9, as shown in FIG. 2. “

Therefore, Wilz teaches that the requisite data manipulation is indeed performed, and they naturally are performed using data manipulation commands, since Wilz employs a processor (column 10, line 59). Lacking in Wilz is an explicit teaching that data manipulation is based on a rules file.

However, there are only options for writing a conversion system. The first is to essentially ‘hard code’ all data conversion rules into Wilz’s data conversion software. The second is to write the use a data file so that (1) the conversion program is easier to read and debug (without having conversion rules in it) and (2) so that the rules are easier to read and modify (being separated from the program). This an essential the concept of data abstraction and modular program, and as Glass notes (page 2, second bullet) this dates all the way to the ‘Pioneering Era’ of computing (1955-1965).

Art Unit: 2876

In view of Glass's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to separate out conversion rules of Wilz into a separate program because this makes for programming that is easier to understand and also more easily modifiable.

Re claims 2, 11, 20 and 29:

Wilz refers (column 10, lines 10-15) to "data transmission to a host device 60, such as a computer, or electronic cash register."

Re claims 3, 12, 21 and 30: It has been established re claim 1 above that Wilz has an interpreter (i.e. data format conversion means) to convert raw data into multiple different formats. It further been established that it would have been obvious to include these data manipulation rules in a separate file, for the sake of modular programming. An expression library is just another word for a file that defines different formats for data conversion, as Wilz would have if Wilz is programmed in a modular way.

Allowable Subject Matter

Claims 4-9, 13-18, 22-27 and 31-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Note that claims 5-9 depend from claim 4, claims 14-18 depend from claim 13, claims 23-27 depend from claim 22 and claims 32-36 depend from claim 31.

Art Unit: 2876

Claims 4, 13, 22 and 31 are all similar and thus the following reasons can apply to any of them.

The prior art fails to teach or fairly suggest, in the context of all other claims from which the claims depend, an arrangement whereby the instructions are compiling instructions for building executable code, a compiler module that uses the compiling instructions to compile a data handling module and the interpreter manipulates the decoded data by operating the data handling module.

Lacking in the prior art is any suggestion that the data collection device (i.e. bar code reader) actually builds executable code, as opposed to having precompiled executable code already loaded into the data collection device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel A. Hess whose telephone number is (571) 272-2392. The examiner can normally be reached on 8:00 AM - 5:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2876

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DH
10/3/05



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PRIMARY EXAMINER